

✓ 54/7413 211665

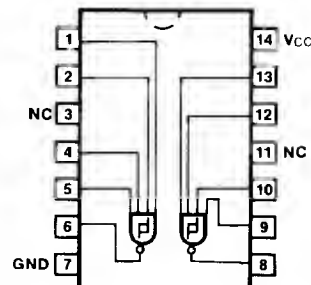
✓ 54LS/74LS13 011666

## DUAL 4-INPUT SCHMITT TRIGGER

CONNECTION DIAGRAM  
PINOUT A

ORDERING CODE: See Section 9

PKGS	PIN OUT	COMMERCIAL GRADE	MILITARY GRADE	PKG TYPE
		$V_{CC} = +5.0 \text{ V} \pm 5\%$ , $T_A = 0^\circ \text{C to } +70^\circ \text{C}$	$V_{CC} = +5.0 \text{ V} \pm 10\%$ , $T_A = -55^\circ \text{C to } +125^\circ \text{C}$	
Plastic DIP (P)	A	7413PC, 74LS13PC		9A
Ceramic DIP (D)	A	7413DC, 74LS13DC	5413DM, 54LS13DM	6A
Flatpak (F)	A	7413FC, 74LS13FC	5413FM, 54LS13FM	3I



INPUT LOADING/FAN-OUT: See Section 3 for U.L. definitions

PINS	54/74 (U.L.) HIGH/LOW	54/74LS (U.L.) HIGH/LOW
Inputs	1.0/1.0	0.5/0.25
Outputs	20/10	10/5.0 (2.5)

DC AND AC CHARACTERISTICS: See Section 3\*

SYMBOL	PARAMETER	54/74		54/74LS		UNITS	CONDITIONS	
		Min	Max	Min	Max			
V <sub>T+</sub>	Positive-going Threshold Voltage	1.5	2.0	1.5	2.0	V	V <sub>CC</sub> = +5.0 V	
V <sub>T-</sub>	Negative-going Threshold Voltage	0.6	1.1	0.6	1.1	V	V <sub>CC</sub> = +5.0 V	
V <sub>T+</sub> —V <sub>T-</sub>	Hysteresis Voltage	0.4		0.4		V	V <sub>CC</sub> = +5.0 V	
I <sub>T+</sub>	Input Current at Positive-going Threshold	-0.65	**	-0.14	**	mA	V <sub>CC</sub> = +5.0 V, V <sub>IN</sub> = V <sub>T+</sub>	
I <sub>T-</sub>	Input Current at Negative-going Threshold	-0.85	**	-0.18	**	mA	V <sub>CC</sub> = +5.0 V, V <sub>IN</sub> = V <sub>T-</sub>	
I <sub>OS</sub>	Output Short Circuit Current	-18	-55	-20	-100	mA	V <sub>CC</sub> = Max	
I <sub>CCH</sub>	Power Supply Current	23		6.0		mA	V <sub>IN</sub> = Gnd	V <sub>CC</sub> = Max
I <sub>CCL</sub>		32		7.0			V <sub>IN</sub> = Open	
t <sub>PLH</sub>	Propagation Delay	27		22		ns	Fig. 3-1, 3-15	
t <sub>PHL</sub>		22		27				

\*DC limits apply over operating temperature range; AC limits apply at  $T_A = +25^\circ \text{C}$  and  $V_{CC} = +5.0 \text{ V}$ . \*\*Typical Value